

PRAIRIE PLAINS LINK



A flock of geese wings its way over the Little Blue River in southern Clay County.

Working in a new watershed

This year, having acquired the necessary equipment, we've expanded the invasive species battle into new lands, presently working along the Little Blue River in southern Clay County. It's actually not new to all of us, as it's home territory to Jan Whitney, who was charged with musk thistle patrol on this site (Little Blue Haven Farm, or the Hubbell Farm) in her younger days. Jeff Gustafson and Sarah Bailey have been clearing red cedar and locust trees from lowland and upland pastures of the farm, now owned by Jan's brother, Jaymes Hubbell. He is participating in the NRCS (Natural Resources Conservation Service) Environmental Quality Incentives Program (EQIP). The program, open to any private landowner, offers cost shares for tree and shrub removal, pollinator plantings and fencing/livestock watering improvements.

Besides being a new revenue stream for Prairie Plains (sub-contracting through Steve Anderson's Habitat Solutions), this project is an important example of what can be done to reclaim native rangeland. Just south of →

Jeff has gained many hours of experience on the new Caterpillar with the tree saw and grapple, while Sarah has been lopping off hundreds of small cedars. The two have made some interesting discoveries on the Clay County land, including a huge cottonwood (right), picturesque river views (top shot) and remnant native flora on the north upland pasture.



NEWSLETTER
February, 2018



Working in a new watershed, continued:

the river in Nuckolls County there is more native prairie. There the economy is dependent on dryland cropping mixed with livestock grazing, in contrast to the more heavily irrigated Hamilton and Clay Counties to its north. Unfortunately, the grazing lands suffer from serious woody invasion, some in the later stages with lots of large trees replacing grassland flora. This is a huge challenge, considering the cost of reclamation, but the end result of not dealing with the problem is total loss of the grassland agricultural base. Restoration and improved management - using fire and moderate adjustments in grazing systems - would save the rangeland and increase native biodiversity, resulting in better wildlife habitat, including pollinators. It is our hope that more landowners will take advantage of the opportunity to participate in this rangeland restoration effort.



Meanwhile, back at the (Sherman) Ranch . . . We recently came up with a win-win partnership on cedar clearing. When land steward Jeff Gustafson learned that Todd Van Housen was in the tree clearing business, and owns the necessary logging and hauling equipment, Todd was invited to cut and remove all the cedars in shelter belts near the farmstead. The job was accomplished in just a few days, with the lumber going to Red Cedar Products of Nebraska, near Clarks. The cedar slash was piled neatly and will be ready to burn when it dries. This was a great solution for cedar control on terrain which was easily reached with large equipment. And it's good to see the wood being put to use.

Education Center Update



Interior finish work is underway at the Education Center, with one major task completed - spraying fire retardant on the extensive open rafters in the upper level. This is a code requirement to improve what is called the fire spread rating of the exposed wood. The process slightly darkened the nearly 100-year-old rafter pine (similar to the color deepening from an oil finish), resulting in a clean and finished look. While the Paschke Brothers construction crew was up high on a stack of four scaffold sections, they covered the high gable ends of the roof interior with reclaimed sheet metal (see photo) originally on the barn's exterior - the same metal we used in the screened porch. The sheets were turned over to expose



the side which had been against the barn - not the side exposed to the elements. It reveals the chemical activity between the wood and metal, including corrosion and wood patterns etched into the surface. It is a very attractive color and texture, as well as a durable and fireproof surface. The carpenters finished the job by hanging an end rafter which serves as final trim.

Presently we're using recycled barn wood to clad the 25 columns in the lower level which support the barn roof (see photo). We first power washed the wood (siding) and Joel Hansen's donated shiplap (roof sheathing from his shed) to remove years of dust and loose paint. The rustic result is extremely durable and interesting with its many colors and weathered textures.

Next will be wainscot installation - three-foot high wall paneling, also recycled barn lumber. It will offer durability which drywall alone would not have, as well as more rustic appeal. The extensive painted drywall above the wainscot and on the ceilings will contrast with the barn wood finish and accentuate the sharp architectural lines.

Paschke Brothers will soon be tiling the restroom walls and starting on the north deck, for which we have acquired a \$20,000 grant from the Hamilton Community Foundation.

We are still waiting to hear the results of two other requests, totaling \$125,000.

Working on the land - and in the sky: Applications for drone imagery

Mike Bullerman, restoration ecologist and GIS specialist (Geographic Information System - maps), is always looking for ways to improve his seed harvesting and planting techniques through custom GIS applications. Now to his title we must add "drone pilot" or the even more impressive "real time high resolution landscape analyst." His new drone (DJI Phantom 3 UAV, ESRI Drone2Map software and some other accessory apps) adds to our suite of mapping tools, allowing us to produce imagery for maps large and small, publications, land analyses and more. Like any new technology, the drone and software application process involves a new learning curve, and takes time to develop. We are betting that this will be a good investment of time, giving us a better way to document our lands over the years. The following are examples the drone technology will enable:

Ecological Restoration

- Pre-planting site analysis, especially when existing air photos and LiDAR data have been invalidated by earth work or other site preparation activities (LiDAR = Light Detection And Ranging - very precise elevation data for detecting topographic change on the earth's surface).
- Evaluating restoration sites.

Education/Events

- Aerial photos and videos for website/social media; outreach to a wider audience explaining what we do and how we do it.
- A tool for fundraising.

Preserves and Land Stewardship

- High resolution mapping of preserves.
- Change analysis of preserves over the years.
- Woodland/shrubland mapping for tree removal work.
- Infrastructure inspection - e.g. fences, wells, tanks, gates.
- Fire reconnaissance.
- Mapping archeological features.

The images to the right illustrate the capability of the drone camera and software to create GIS base map imagery. At a height of 150 feet the resolution of the 12 megapixel camera is 0.8 inches per pixel width (= .64 square inches per pixel). Current USDA air photo resolution is two feet per pixel. Comparatively, the high resolution photos from the drone are 900 times sharper. Decreasing the flight altitude would increase resolution to the point that we could see individual blooming plants - useful for botanical inventories!

The shaded relief image on the far right is created by the software in a way similar to a stereoscope, which makes two identical photos appear in 3-D. The resulting image is startling in its accuracy and detail. It will be useful in many restoration and educational projects.

Drone-assisted photography



Looking southeast - the Education Center and restoration sites of Gjerloff Prairie.



In the farmyard, looking north - the seed barn with attached greenhouse, with the Education Center, Gjerloff Prairie and Platte Valley in background.



Approaching Events

One more "Winter Explore!"

Sat., March 10 - Sherman Ranch
10:00 a.m. to noon

We invite families to explore the Sherman Ranch on our hike and participate in a prairie scavenger hunt.

Questions:

Sarah Bailey (402) 694-5535
Pat Carlson (308) 986-2522

Winter Explore is a Bader Park & Prairie Plains partnership.

**Walking Tour of
Sherman Ranch - and more!**
Saturday, April 21, 9:00 a.m.

Everyone's invited! Guided walking tour of prairie and river frontage at Sherman Ranch, led by Prairie Plains Founder/Director Bill Whitney. Participants will need to be able to walk leisurely for about 1.5 hours. The tour will be followed by a visit to Gjerloff Prairie - just a five-minute drive from Sherman Ranch - for refreshments and a tour of the Education Center.

This tour is one of the 2018 **Nebraska Science Festival** events held across the state from April 19 to 28. The Festival began in 2013 as an initiative of the University of Nebraska Medical Center, which continues to administer the program with the assistance of a number of organizations and individuals interested in the advancement of science literacy. The Science Festival is designed to make science accessible, interactive, relevant and fun for kids and adults alike.

Learn more:
nescifest.com

Note these summer programs for area youth!



Current (2017-18) 6th through 10th-graders looking for a great outdoor summer adventure are invited to participate in the

Youth Naturalist Program the week of June 18-22. The group will enjoy hikes, learning about the ecosystem in which they live and how to care for, protect and restore it. Students will actively explore natural areas along the Platte River in Hamilton and Merrick counties, observing the landscape, plants and animals present. This is an exciting opportunity to gain valuable knowledge about nature and our Nebraska ecosystems and participate in outdoor recreational activities such as kayaking and camping. Campers also have the opportunity to interact with professionals with careers in natural resources and habitat/wildlife management. These activities are intended to open new doors for students interested in the natural world and help them find new ways to enjoy the outdoors.

Find more info at <http://www.prairieplains.org/education/youth-naturalist-program.html> including a flier, application and scholarship form (scroll down toward the bottom of the page under "More Information").

SOAR 2018: FLIGHT 27

Registration for SOAR begins on April 2! Kids presently in grades 3-6 (school year 2017-18) won't want to miss out on the fun we have planned for this summer's camps! There will be two FOUR-day camps: July 9-12 and July 16-19. We'll meet at the Aurora Middle School each day at 8:00 a.m., then SOAR-bus out to favorite outdoor classrooms - Mondays at Lake Mary, Tuesdays at Gjerloff Prairie, Wednesdays at Farmers Valley Cemetery, and an exciting full day at Bader Park on Thursdays, including everybody's favorite, RIVER DAY! The first three days we'll return to the school mid-day for afternoon lab & classroom activities, dismissing at 3:30.

SOAR gets children out on the land - and in the water - to discover the great diversity of life that exists just beyond their own back yards. By using local field sites and an interdisciplinary curriculum including natural and physical science, history, art, agriculture, language and music, SOAR aims to create a deeper appreciation for where we live in the minds of our children.

More info: prairieplains.org/education/soar.html

"Teaching children about the natural world should be treated as one of the most important events in their lives." - Thomas Berry (1914-2009)

PRAIRIE PLAINS LINK
is a publication of



**Preserving, restoring and maintaining
Nebraska native prairies -
Creating opportunities for education,
research, stewardship and place-
based community development.**

Prairie Plains Resource Institute is an educational land trust incorporated in 1980 as a non-profit, 501(c)(3) tax-exempt membership organization based in Aurora, Nebraska.

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